

UNIFORM STANDARD DETAILS

for

PUBLIC WORKS CONSTRUCTION

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**1998
ARIZONA**

(Includes Revisions Through 2007)

100 SERIES: GENERAL INFORMATION

- 101 GENERAL INFORMATION
- 110 PLAN SYMBOLS
- 112 DIMENSIONING FOR ROAD IMPROVEMENT PLANS
- 120-1 SURVEY MARKER
- 120-2 SURVEY MARKER (FOR UNINCORPORATED AREAS OF THE COUNTY)
- 130 BARRICADES
- 131 STREET SIGN BASE
- 135-1 STEEL GUARD RAIL
- 135-2 STEEL GUARD RAIL
- 135-3 STEEL GUARD RAIL
- 135-4 STEEL GUARD RAIL
- 140 SAFETY POST
- 145 SAFETY RAIL
- 150 PRECAST SAFETY CURB
- 160 6' CHAIN LINK FENCE AND GATE
- 170 TYPICAL RUNWAY OR TAXIWAY LIGHTING DETAIL
- 190 ROCK CORRECTION PROCEDURE FOR MAXIMUM DENSITY DETERMINATION

200 SERIES: STREET INFORMATION

- 200 BACKFILL, PAVEMENT AND SURFACE REPLACEMENT
- 201 PAVEMENT SECTION AT TERMINATION
- 202 ALLEY DETAILS (PAVED AND UNPAVED)
- 203 SCUPPERS
- 204 EQUIPMENT CROSSING
- 205 PAVED TURNOUTS
- 206-1 CONCRETE SCUPPER
- 206-2 CONCRETE SCUPPER
- 206-3 CONCRETE SCUPPER
- 210 RESIDENTIAL SPEED HUMP
- 211 STANDARD TRENCH PLATING DETAIL
- 212 UTILITY POTHOLE REPAIR
- 220-1 CURB AND GUTTER - TYPES 'A', 'B', 'C', AND 'D'
- 220-2 CURB AND GUTTER - TYPES 'E' AND 'F'
- 221 CURB AND GUTTER (TRANSITION, INTEGRAL AND WARNING BEACON)
- 222 SINGLE CURB - TYPES 'A', 'B' AND TERMINATION
- 223 MEDIAN NOSE TRANSITION
- 224 JOINT FOR DRAINAGE INLETS AND MANHOLE COVERS
- 225 CONCRETE PAVERS
- 230 SIDEWALKS
- 231 SIDEWALK RAMPS - TYPE 'A'

200 SERIES: STREET INFORMATION (CONTINUED)

- 232 SIDEWALK RAMPS - TYPE 'B'
- 233 SIDEWALK RAMPS - TYPE 'C'
- 234 SIDEWALK RAMPS - TYPE 'D'
- 240 VALLEY GUTTER
- 250 DRIVEWAY ENTRANCES
- 251 RETURN TYPE DRIVEWAYS
- 252 BUS AND PARKING BAYS
- 260 ALLEY ENTRANCE (WITH COMBINED CURB AND GUTTER)
- 261 ALLEY ENTRANCE (WITH ROLL TYPE CURB AND GUTTER)
- 262 WING TYPE ALLEY ENTRANCE (WITH COMB. CURB & GUTTER)
- 263 WING TYPE ALLEY ENTRANCE (WITH ROLL CURB & GUTTER)
- 270 FRAME AND COVER (AND GRADE ADJUSTMENTS)

300 SERIES: WATER INFORMATION

- 301 BLOCKING FOR WATER GATE AND BUTTERFLY VALVES
- 302-1 JOINT RESTRAINT WITH TIE RODS
- 302-2 JOINT RESTRAINT WITH TIE RODS
- 303-1 JOINT RESTRAINT FOR DUCTILE IRON AND POLYETHYLENE WRAPPED DUCTILE IRON WATER PIPES
- 303-2 JOINT RESTRAINT FOR DUCTILE IRON AND POLYETHYLENE WRAPPED DUCTILE IRON WATER PIPES
- 310 CAST IRON WATER METER BOX COVER NO. 1
- 311 CAST IRON WATER METER BOX COVER NO. 2
- 312 CAST IRON WATER METER BOX COVER NO. 3
- 313 CAST IRON WATER METER BOX COVER NO. 4
- 314 CAST IRON WATER METER BOX COVER NO. 5
- 320 CONCRETE WATER METER BOXES
- 321 STANDARD WATER METER VAULT
- 340 INSTALLING TAPPING SLEEVES AND VALVES
- 342 CONCRETE PRESSURE PIPE TAPPING SLEEVE
- 345-1 3", 4", 6" WATER METER
- 345-2 4", 6", WATER METER WITH ON-SITE FIRE HYDRANTS
- 346 FIRE LINE DETECTOR CHECK VAULT
- 360 FIRE HYDRANT INSTALLATION
- 362 LOCATIONS FOR NEW HYDRANTS
- 370 VERTICAL REALIGNMENT OF WATER MAINS
- 380 THRUST BLOCKS FOR WATER LINES
- 381 ANCHOR BLOCKS FOR VERTICAL BENDS
- 389 CURB STOP WITH VALVE BOX AND COVER
- 390 CURB STOP WITH FLUSHING PIPE
- 391-1 VALVE BOX INSTALLATION AND GRADE ADJUSTMENT
- 391-2 VALVE BOX INSTALLATION
- 392 DEBRIS CAP INSTALLATION

DETAIL NO.

100-1

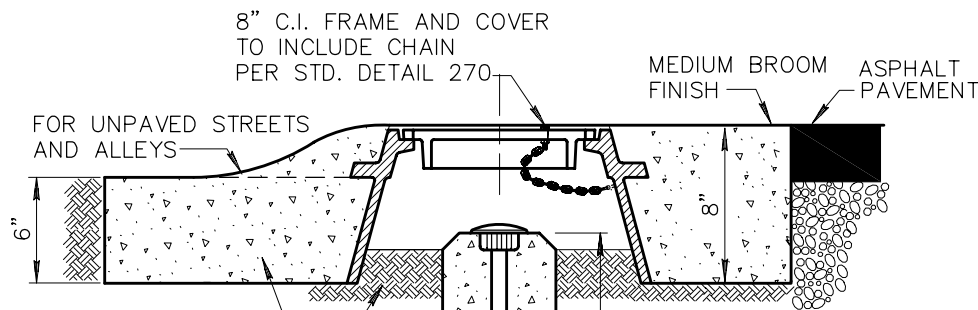


STANDARD DETAIL
ENGLISH

INDEX (PAGE 1 OF 2)

DETAIL NO.

100-1

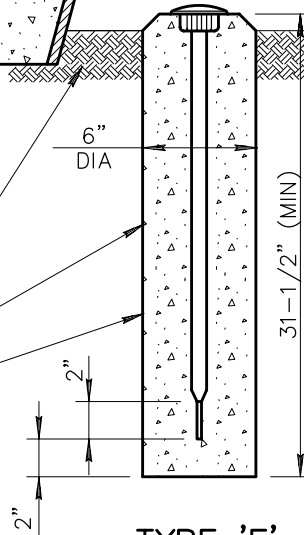


CLASS AA CONCRETE -
PER SECT 725 -
6"-8" THICK, 40" DIA

SUBGRADE
PREPARATION PER
SECT 301 OR 601

CLASS B CONCRETE
PER SECT 725

SEE NOTE 2



TYPE 'E'
(WITH FRAME)

CHAMFERED 3/4"
AT TOP OF POST

BRASS CAP

3/4" GALV PIPE 16" OR
30" LONG. FLATTENED
2" AT END. DEPENDING
ON APPLICATION
SEE NOTE 3

6" DIA
(CYLINDER)

CLASS B CONCRETE
PER SECT 725

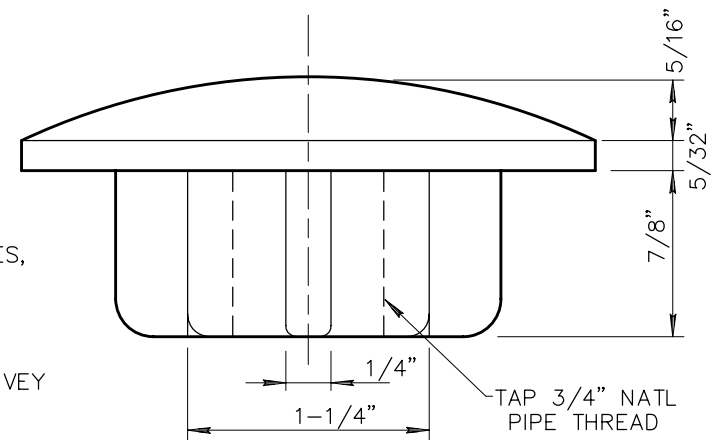
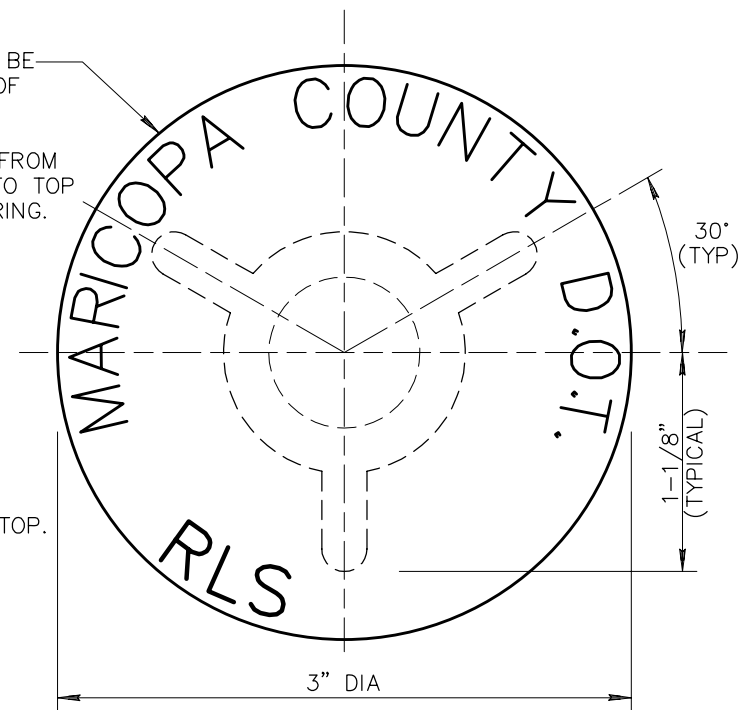
SEE NOTE 1

TYPE 'D'
(WITHOUT FRAME)

BRASS CAP TO BE
CONSTRUCTED OF
RED BRASS OR
BRONZE.
1/16" BORDER FROM
EDGE OF CAP TO TOP
OF 1/4" LETTERING.

NOTES:

1. TYPE "D" NORMALLY USED AT STREET INTERSECTIONS, AS SUBDIVISION MONUMENTS AND 1/16 CORNERS.
2. TYPE "E" NORMALLY USED ON SECTION CORNERS, 1/4 CORNERS AND AT THE CENTER OF SECTIONS (PER ARS 33-103). CONCRETE POST IS CHAMFERED 3/4" AT TOP.
3. SECTION CORNERS, 1/4 CORNERS AND CENTER OF SECTIONS SHALL BE 30" LONG, ALL OTHER MARKERS SHALL BE A MINIMUM OF 16" PER THE ARIZONA BOARD OF TECHNICAL REGISTRATION (BTR) UNLESS SUBSURFACE OBSTRUCTIONS LIMIT LENGTH.
4. IN ALL CASES, THE POINT SURVEYED SHALL BE IDENTIFIED BY A PUNCH MARK AND IN ADDITION THE CAP SHALL BE STAMPED WITH THE REGISTERED LAND SURVEYOR (RLS) REGISTRATION NUMBER AND YEAR.
5. WHEN APPLICABLE, STAMP THE APPROPRIATE PUBLIC LAND MARKINGS PER CURRENT MANUAL OF INSTRUCTIONS FOR THE SURVEY OF THE PUBLIC LANDS OF THE UNITED STATES, PREPARED BY THE BUREAU OF LAND MANAGEMENT.
6. IN ALL CASES WHEN MONUMENTS ARE SET A CORNER RECORD OR RESULTS OF SURVEY SHALL BE RECORDED. (PER BTR)



CAP DETAIL

DETAIL NO.

120-2



STANDARD DETAIL
ENGLISH

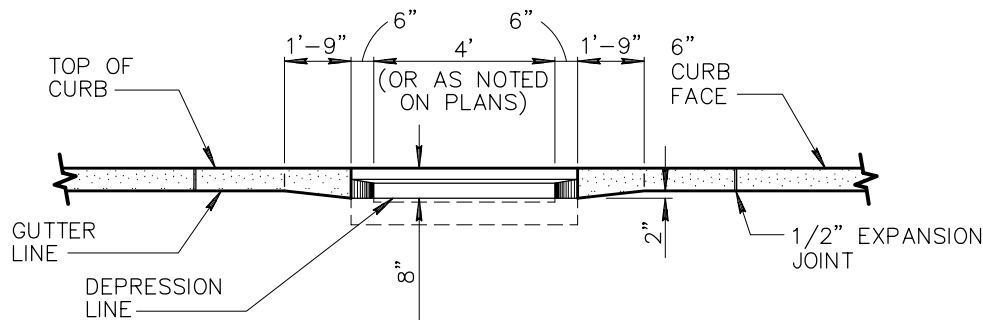
SURVEY MARKER
(FOR UNINCORPORATED AREAS OF COUNTY)

REVISED

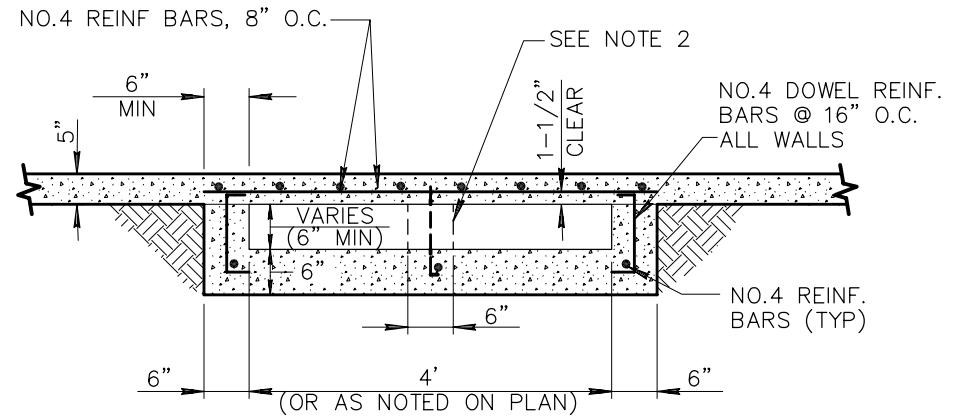
01-01-2007

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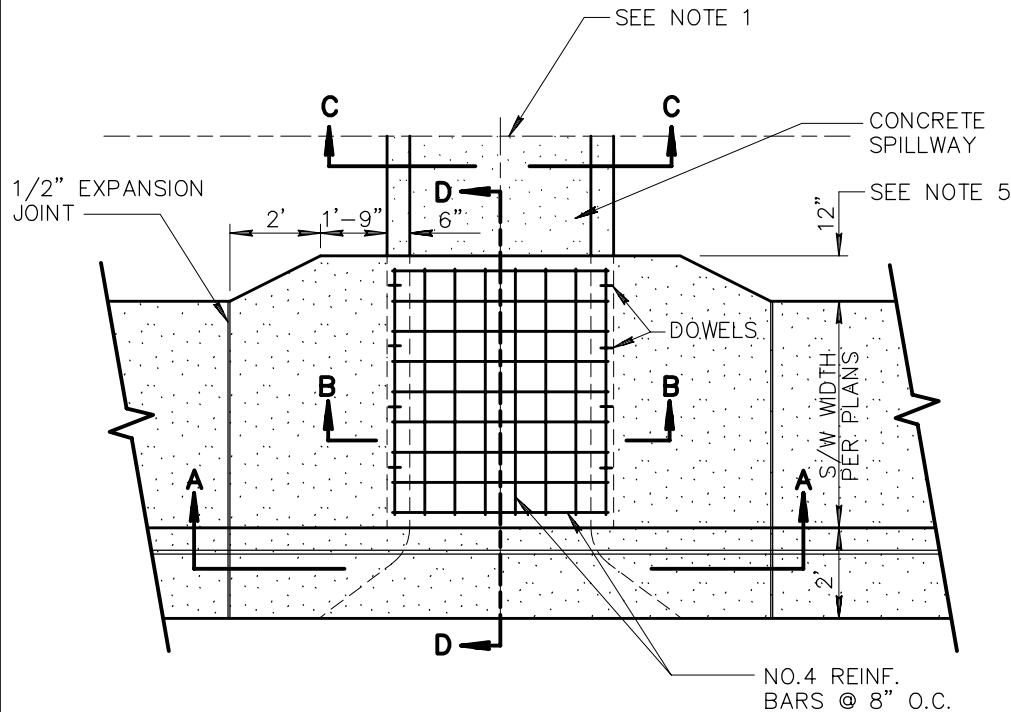
120-2



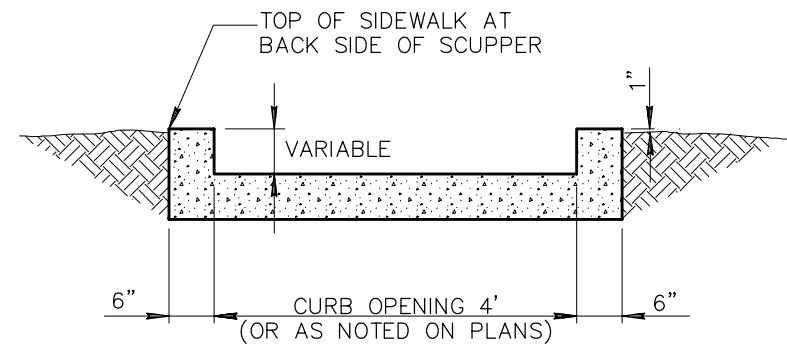
SECTION A-A



SECTION B-B



SCUPPER PLAN VIEW



SECTION C-C SPILLWAY

NOTES:

1. TRANSITION TO SPILLWAY/CHANNEL AS PER APPROVED PLANS.
2. A CENTER WALL SHALL BE INSTALLED IN SCUPPERS WIDER THAN 4' OR IF MORE THAN 1 SCUPPER IS BUILT IN SERIES.
3. EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, ASTM D-1751.
4. CONCRETE FOR THE SCUPPER SHALL BE CLASS 'A' PER SECTION 725. CONCRETE FOR THE SPILLWAY SHALL BE CLASS 'A' OR CLASS 'B'.
5. 12" OFFSET DISTANCE SHALL BE INCREASED TO 2'-6" FOR DESIGNATED BICYCLE PATHS.

DETAIL NO.
206-1



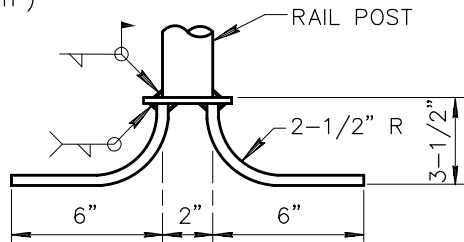
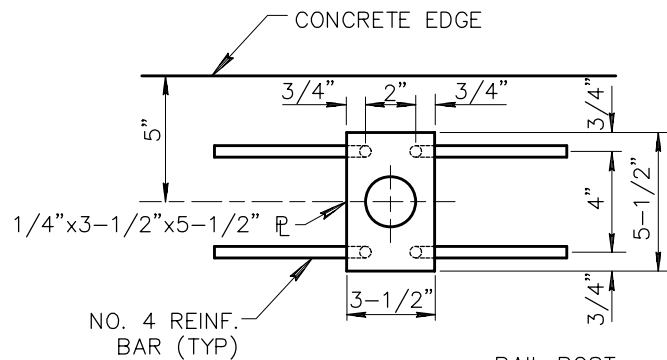
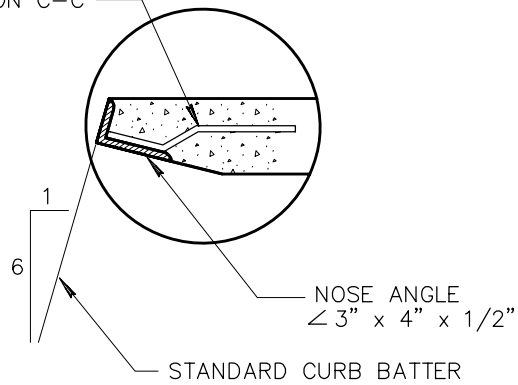
STANDARD DETAIL
ENGLISH

CONCRETE SCUPPER

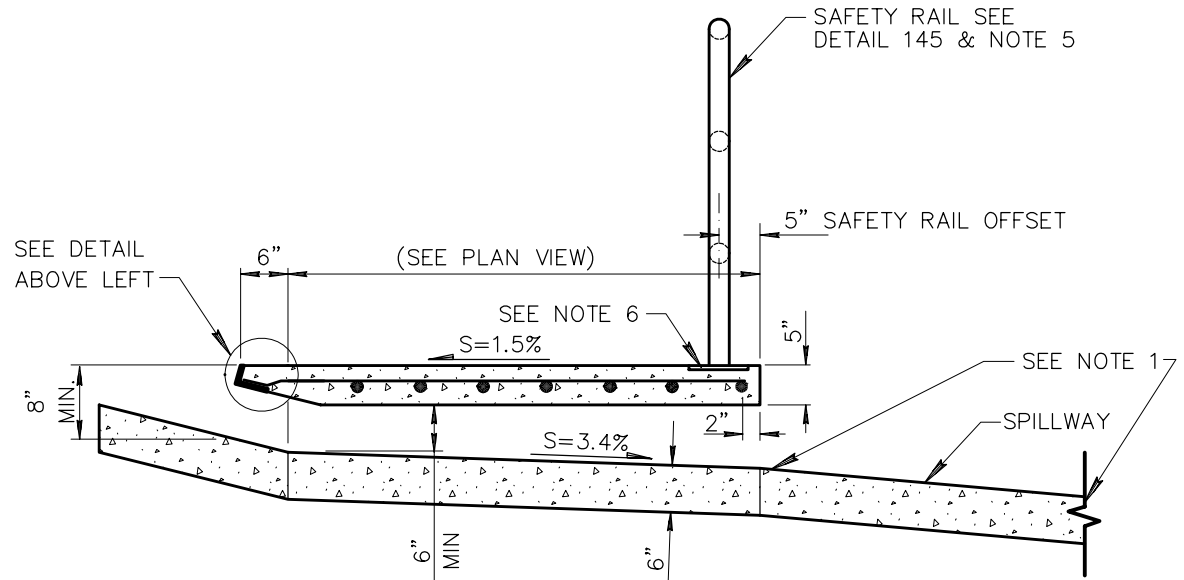
REVISED
01-01-2007

DETAIL NO.
206-1

NO. 4 REINFORCEMENT
WELDED TO ANGLE SEE
DETAIL 536-1,
SECTION C-C



WELD PLATE



SECTION D-D

NOTES:

1. TRANSITION TO SPILLWAY/CHANNEL AS PER APPROVED PLANS.
2. A CENTER WALL SHALL BE INSTALLED IN SCUPPERS WIDER THAN 4' OR IF MORE THAN 1 SCUPPER IS BUILT IN SERIES.
3. EXPANSION JOINT FILLER SHALL BE 1/2" BITUMINOUS TYPE PREFORMED EXPANSION JOINT FILLER, ASTM D-1751.
4. CONCRETE FOR THE SCUPPER SHALL BE CLASS 'A', PER SECTION 725. CONCRETE FOR THE SPILLWAY SHALL BE CLASS 'A' OR CLASS 'B'.
5. SAFETY RAIL SHALL BE CONTINUOUS BETWEEN THE SPILLWAY EXTERIOR WALLS.
6. USE WELD PLATES FOR SAFETY RAIL ANCHORS LOCATED IN THE 5" THICK CONCRETE.

DETAIL NO.

206-2



STANDARD DETAIL
ENGLISH

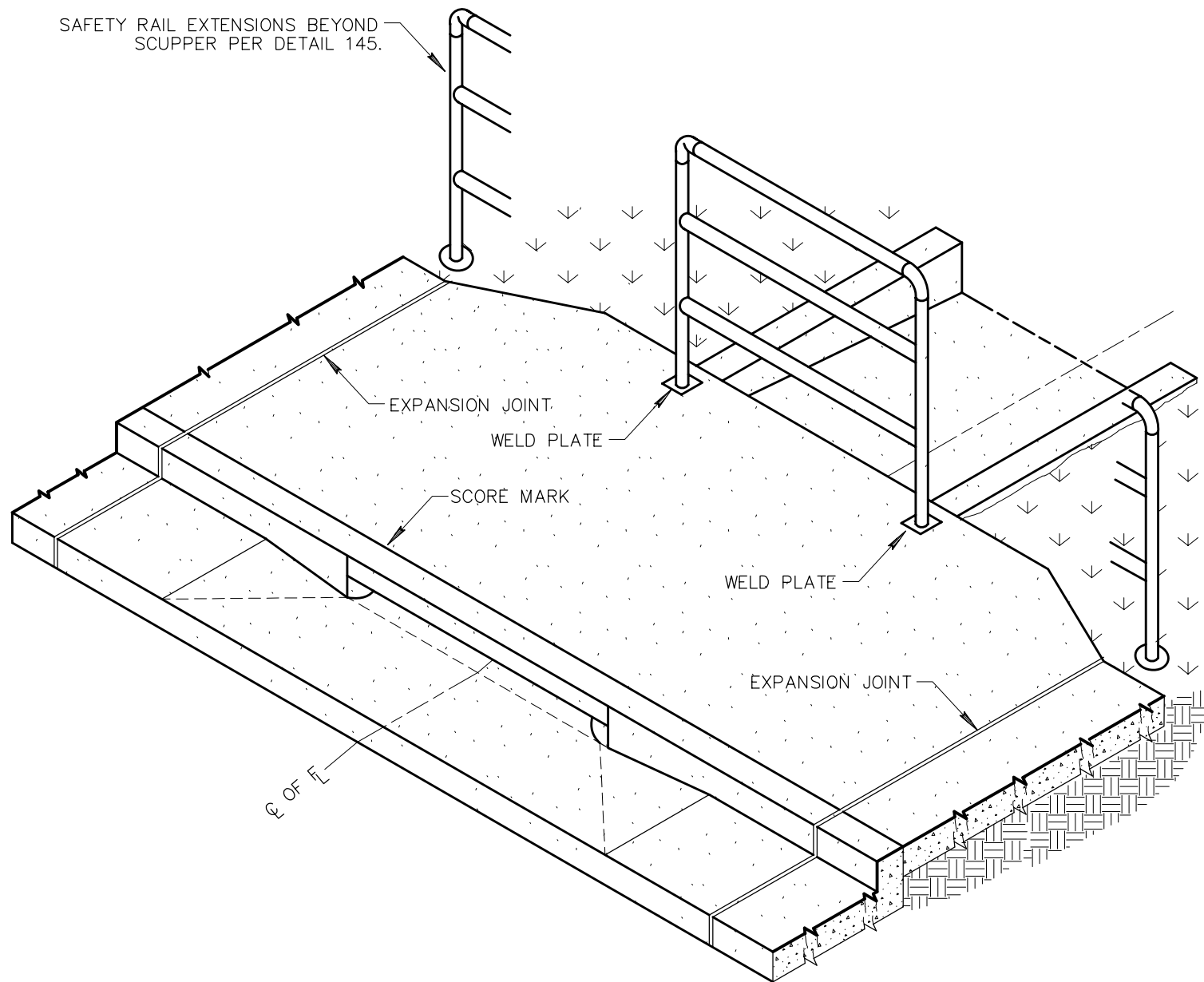
CONCRETE SCUPPER

REVISED

01-01-2007

DETAIL NO.

206-2



DETAIL NO.

206-3



STANDARD DETAIL
ENGLISH

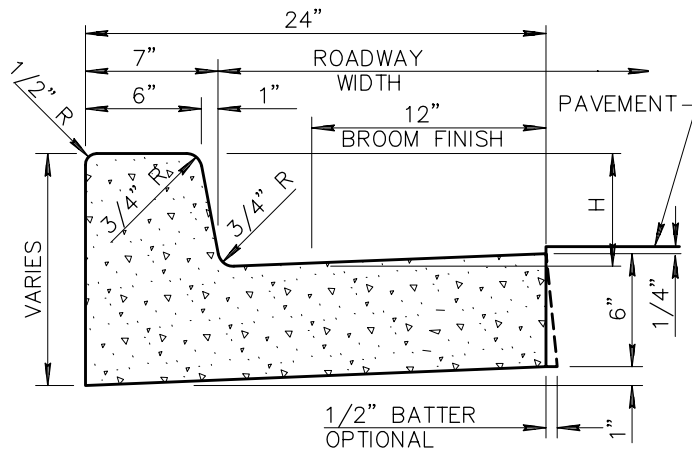
CONCRETE SCUPPER

REVISED

01-01-2007

DETAIL NO.

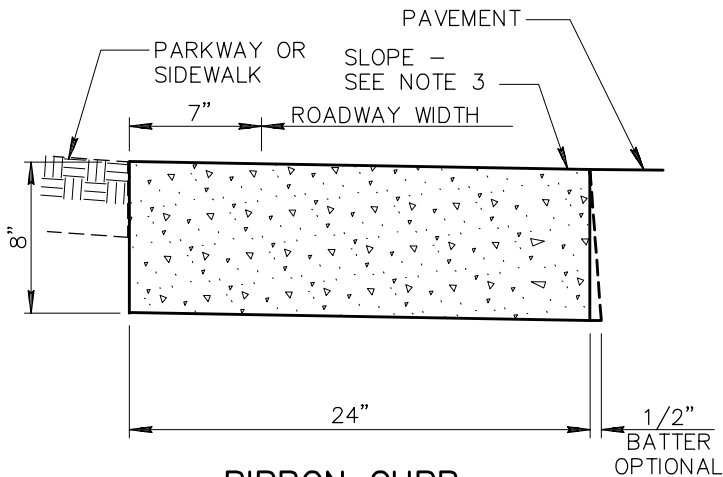
206-3



**VERTICAL CURB AND GUTTER
(TYPE A)**

NOTES: (TYPE A)

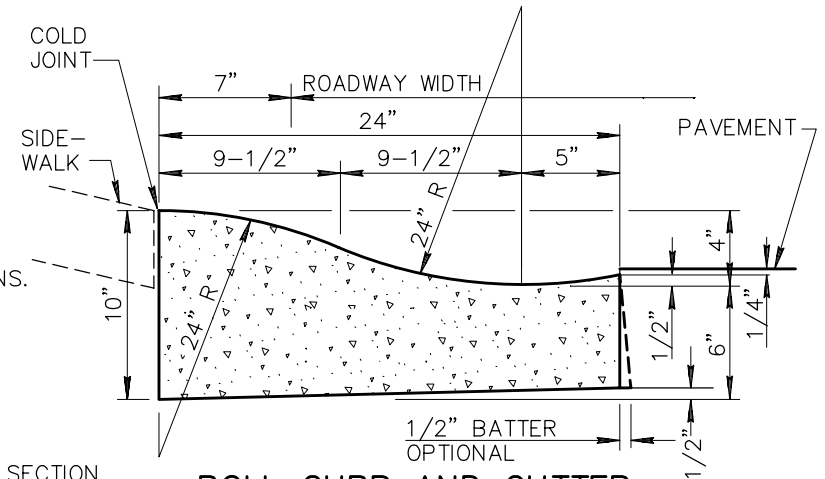
1. ALL EXPOSED SURFACES TO BE TROWEL FINISHED EXCEPT AS SHOWN. SEE SECT. 340.
2. H=6" OR AS SPECIFIED ON PLANS.
3. CONTRACTION JOINT SPACING 10' MAXIMUM.
4. EXPANSION JOINTS AS PER SECT. 340.
5. CLASS 'B' CONCRETE PER 725.
6. WHEN THE ADJACENT PAVEMENT SECTION SLOPES AWAY FROM THE GUTTER, THE SLOPE OF THE GUTTER PAN SHALL MATCH PAVEMENT CROSS SLOPE.



**RIBBON CURB
(TYPE B)**

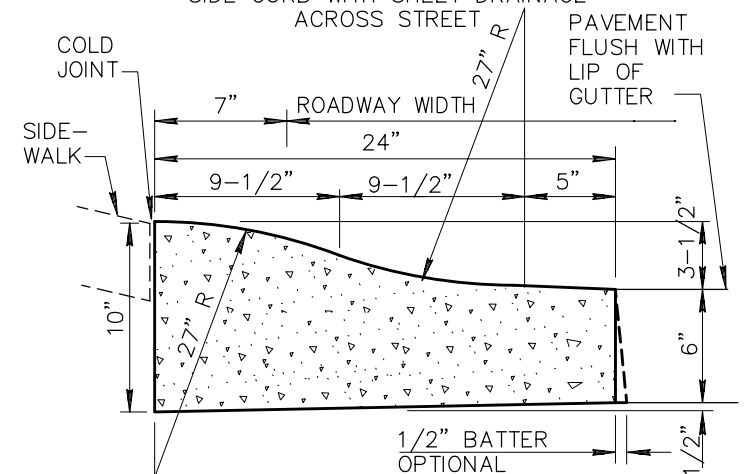
NOTES: (TYPE B)

1. CONSTRUCT CURB AND INSTALL 1/2" MASTIC EXPANSION JOINTS, A.S.T.M. D-1751. SECT. 340.
2. BROOM FINISH ALL SURFACES.
3. RIBBON CURB MAY SLOPE TOWARDS PAVEMENT OR PARKWAY AS INDICATED ON PLANS.
4. CONTRACTION JOINT SPACING 10' MAXIMUM.
5. CONCRETE SHALL BE CLASS 'B' PER SECT. 725 AND INSTALLED PER SECT. 505.



**ROLL CURB AND GUTTER
(TYPE C)**

SPECIAL SECT. USE FOR HIGH SIDE CURB WITH SHEET DRAINAGE ACROSS STREET



(TYPE D)

NOTES: (C & D)

1. ALL WORK AND MATERIALS SHALL CONFORM TO SECT. 304, 505 AND 725. BROOM FINISH TO EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 10' MAXIMUM.
3. EXPANSION JOINTS AS PER SECT. 340.
4. CLASS 'B' CONCRETE PER 725.

DETAIL NO.

220-1



STANDARD DETAIL
ENGLISH

**CURB AND GUTTER
TYPES A, B, C AND D**

REVISED

01-01-2007

DETAIL NO.

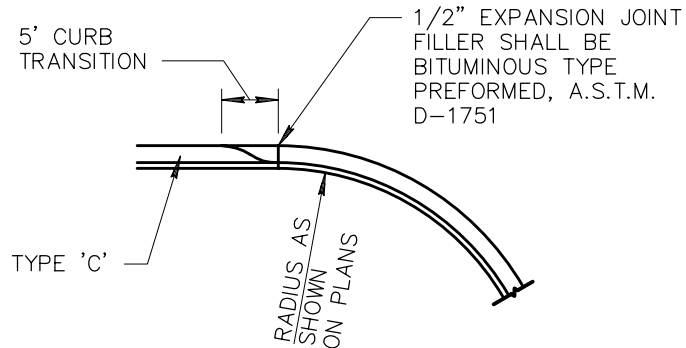
220-1



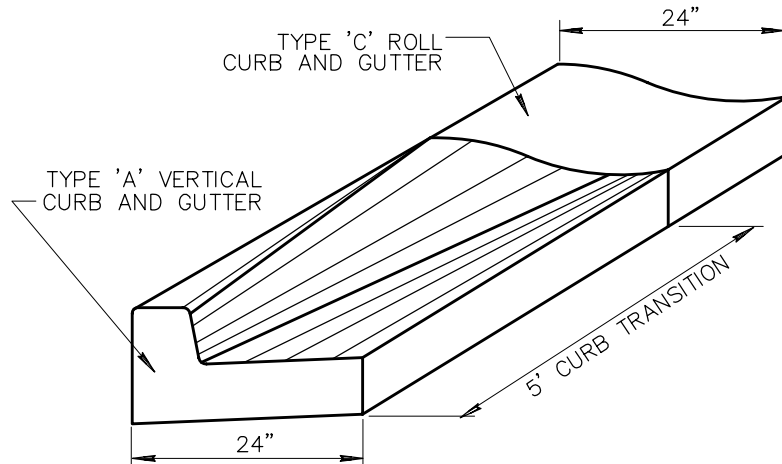
NOTES: (E & F)

1. ALL EXPOSED SURFACES TO BE TROWEL FINISHED EXCEPT AS SHOWN. SEE SECT. 340.
2. CONTRACTION JOINT SPACING 10' MAXIMUM.
3. EXPANSION JOINTS PER SECT. 340.
4. CLASS 'B' CONCRETE PER SECT. 725.
5. WHEN THE ADJACENT PAVEMENT SECTION SLOPES AWAY FROM THE GUTTER, THE SLOPE OF THE GUTTER PAN SHALL MATCH THE PAVEMENT CROSS SLOPE.

CURB AND GUTTER TRANSITION



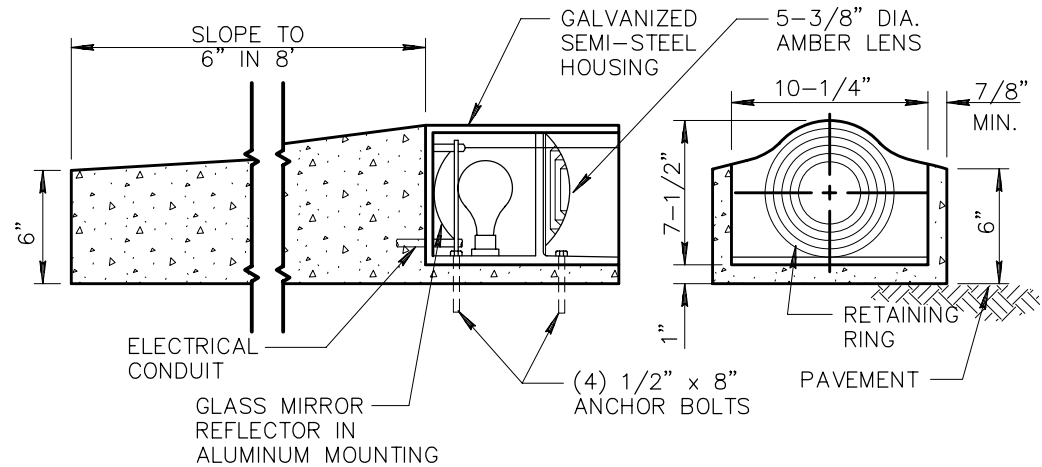
CURB TRANSITION TYPE 'A' TO TYPE 'C'



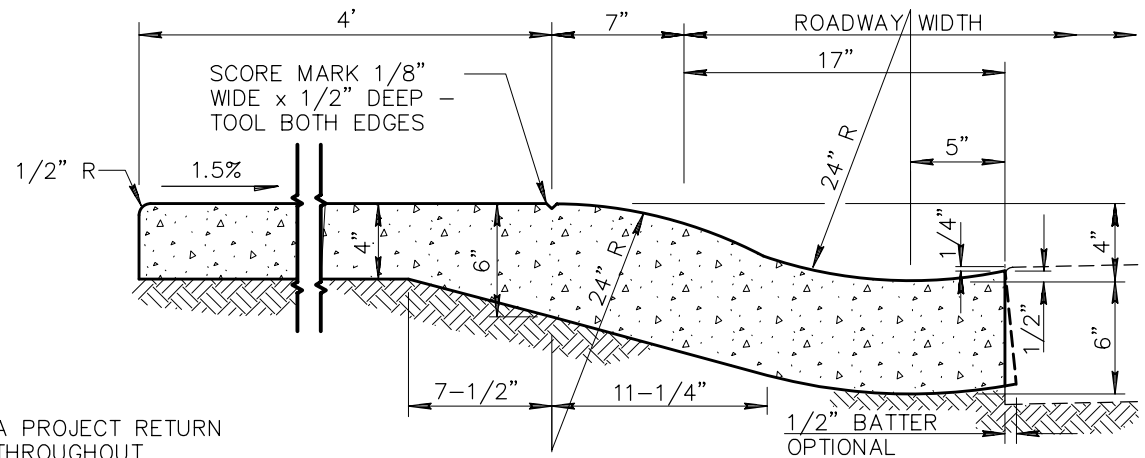
NOTES: (CURB AND GUTTER TRANSITIONS)

1. THE CURB TRANSITION WILL BE PAID FOR AS TYPE 'C'. WHEN A PROJECT RETURN AND GUTTER THROUGHOUT, THE ENTIRE RETURN AND GUTTER THROUGHOUT, THE ENTIRE RETURN SHALL BE MEASURED AND PAID FOR AS TYPE 'A'.
2. WHERE PROPOSED CONSTRUCTION IS TO BE CONNECTED TO EXISTING CURB AND GUTTER, THE TRANSITION SHALL BE INDICATED ON PLANS.
3. CLASS 'B' CONCRETE PER SECT. 725.
4. TRANSITION BETWEEN TYPICAL SECTIONS SHALL BE ACCOMPLISHED BY THE USE OF DIRECT STRAIGHT LINE TRANSITIONS OF THE FLOW LINE AND OTHER SURFACE FEATURES.

CURB WARNING BEACON



INTEGRAL ROLL CURB, GUTTER AND SIDEWALK



NOTES: (INTEGRAL ROLL CURB, GUTTER AND SIDEWALK)

1. CONCRETE TO BE MONOLITHIC POUR. EXPOSED SURFACE FINISH AS PER SIDEWALK AND GUTTER DETAIL.
2. CONTRACTION JOINT SPACING 5' MAXIMUM.
3. EXPANSION JOINTS PER SECT. 340.
4. CLASS 'B' CONCRETE PER SECT. 725.

DETAIL NO.

221



STANDARD DETAIL
ENGLISH

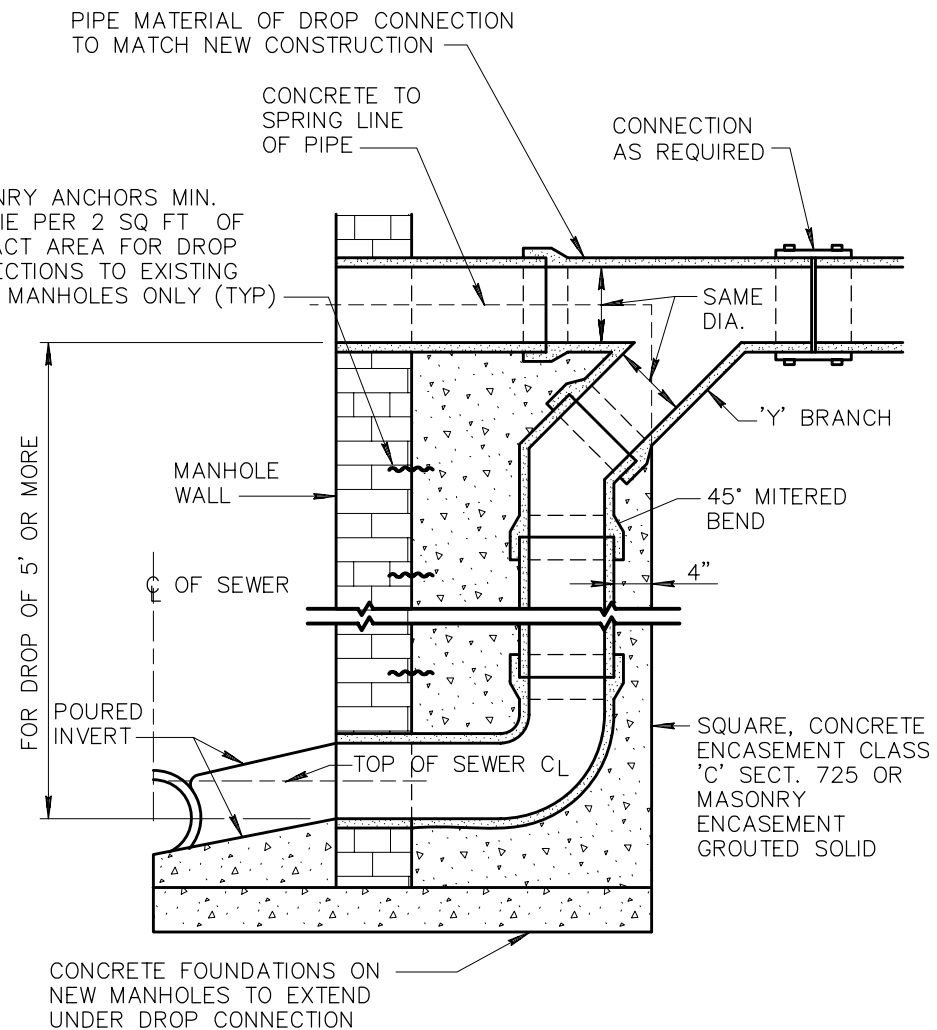
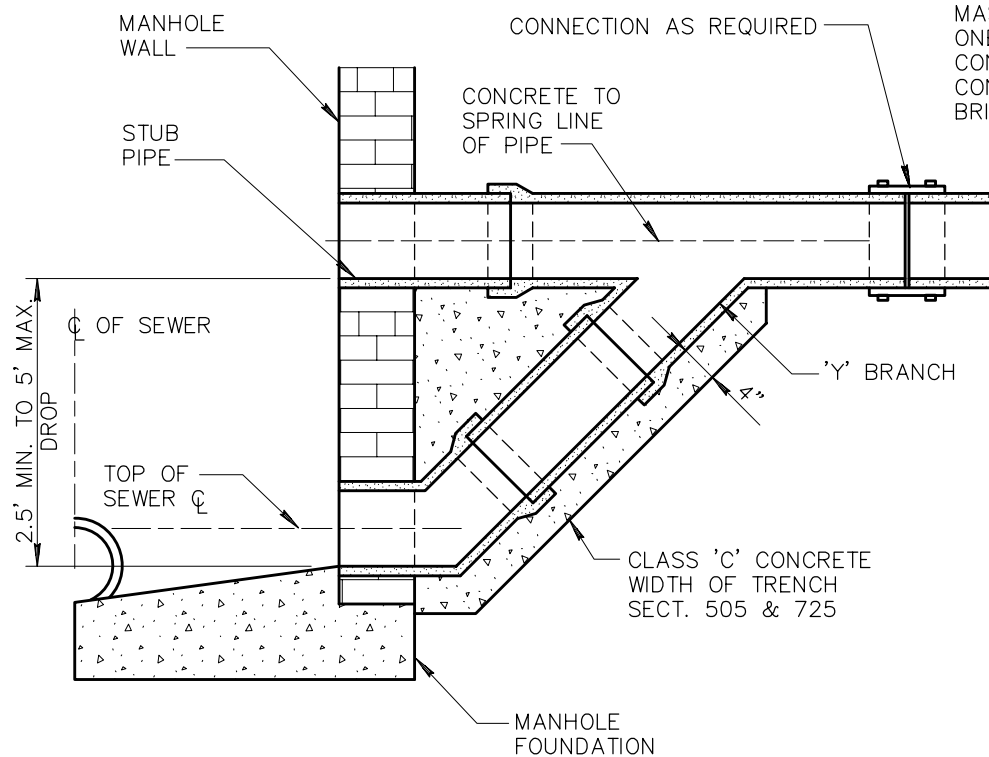
CURB AND GUTTER
(TRANSITION, INTEGRAL & WARNING BEACON)

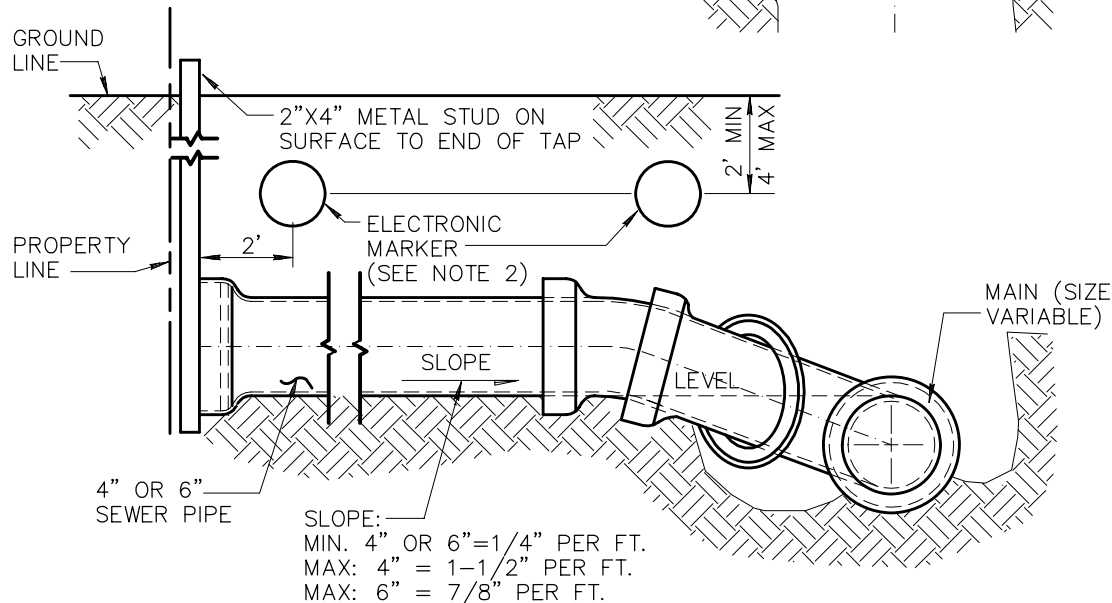
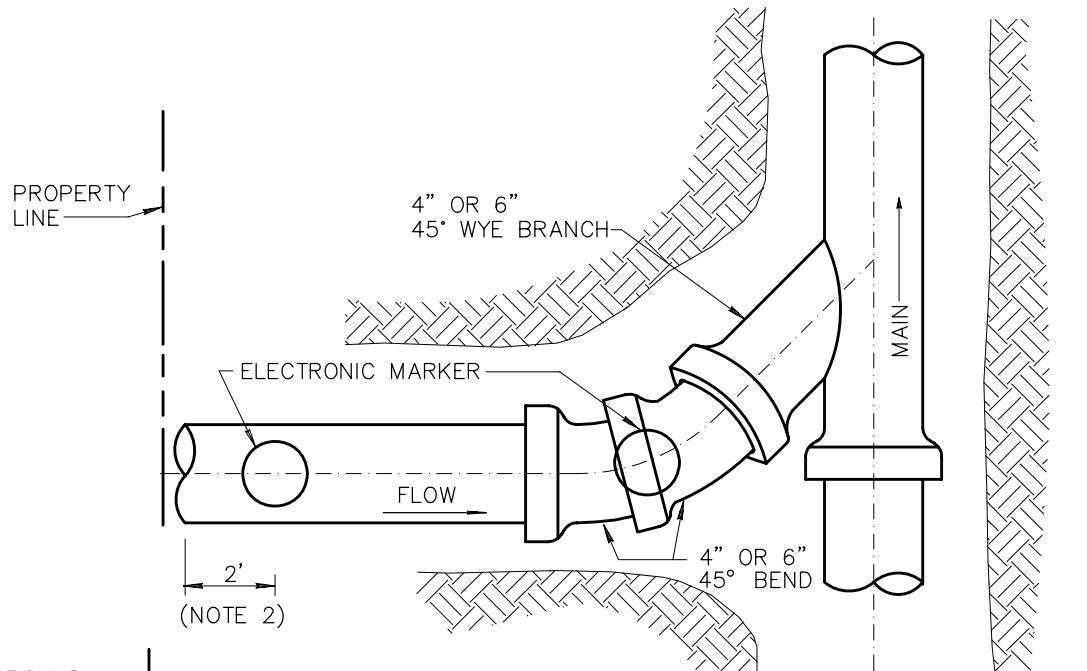
REVISED

01-01-2007

DETAIL NO.

221





ELECTRONIC MARKER PLACEMENT

NOTES:

1. ELECTRONIC MARKER SHALL BE A 3M MODEL 1424-XR/ID [4" DIAMETER SELF LEVELING MARKER BALL GREEN IN COLOR] OR APPROVED EQUAL OR AS REQUIRED BY THE LOCAL AGENCY.
2. MARKER SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS, 2' BACK FROM THE END OF THE SEWER SERVICE STUB AND CINCH TIED TO PIPE OR ABOVE PIPE AS REQUIRED BY LOCAL AGENCY. AN ADDITIONAL MARKER SHALL BE INSTALLED AT EACH SERVICE STUB BEND.
3. ELECTRONIC MARKER SHALL BE RESTORED BY CONTRACTOR IF DISTURBED WHEN PRIVATE SERVICE LINE CONNECTION IS INSTALLED.
4. MARKER SHALL BE USED IN ADDITION TO A 2"x4" METAL STUD.
5. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
6. SIZE OF TAP SHALL BE DESIGNATED ON PLANS.
7. CONSTRUCT TAP AT MINIMUM SLOPE IF COVER WILL BE LESS THAN 5' AT PROPERTY LINE.
8. ALL FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. THE CONTRACTOR MAY VARY FROM THE DRAWING TO USE THE APPROPRIATE WYES, TEE-WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTINGS JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DEFLECTION.
9. END OF TAP TO BE SEALED AND MARKED AS NOTED.

DETAIL NO.
440-1

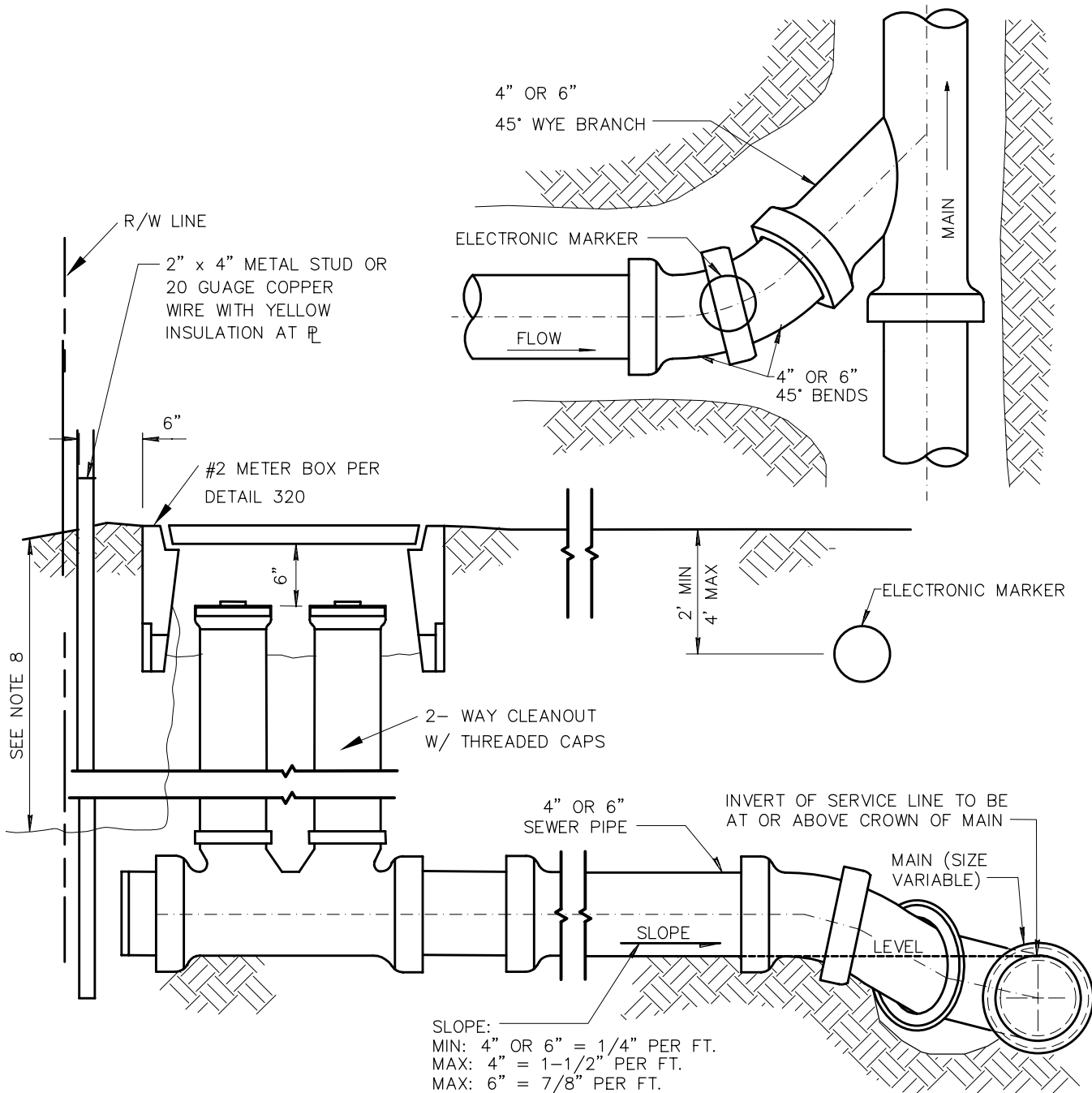


STANDARD DETAIL
ENGLISH

**TYPE 'A' – SEWER BUILDING CONNECTION
ELECTRONIC BALL MARKERS (STANDARD)**

REVISED
01-01-2007

DETAIL NO.
440-1



NOTES:

1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF TAP SHALL BE DESIGNATED ON PLANS.
3. CONSTRUCT TAP AT MINIMUM SLOPE IF COVER WILL BE LESS THAN 5' AT PROPERTY LINE.
4. IF DEPTH REQUIRES, MINIMUM SLOPE CAN BE REDUCED TO 1/8" PER FOOT PROVIDED STUB IS STAKED TO GRADE.
5. ALL FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. THE CONTRACTOR MAY VARY FROM THE DRAWING TO USE THE APPROPRIATE WYES, TEE-WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTING JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DEFLECTION.
6. END OF TAP TO BE SEALED AND MARKED AS NOTED.
7. ELECTRONIC MARKER SHALL BE A 3M MODEL 1424-XR/iD [4" DIAMETER SELF LEVELING MARKER BALL GREEN IN COLOR] OR APPROVED EQUAL OR AS REQUIRED BY THE LOCAL AGENCY.
8. # 14 BARE COPPER LOCATOR WIRE ACCESSIBLE AT R/W AND AT PROPERTY OWNER CLEANOUT BOX NO GREATER THAN 4' DEEP.
9. STAMP OR WELD THE LETTER "S" ON LID OF METER BOX.

DETAIL NO.

440-2



STANDARD DETAIL
ENGLISH

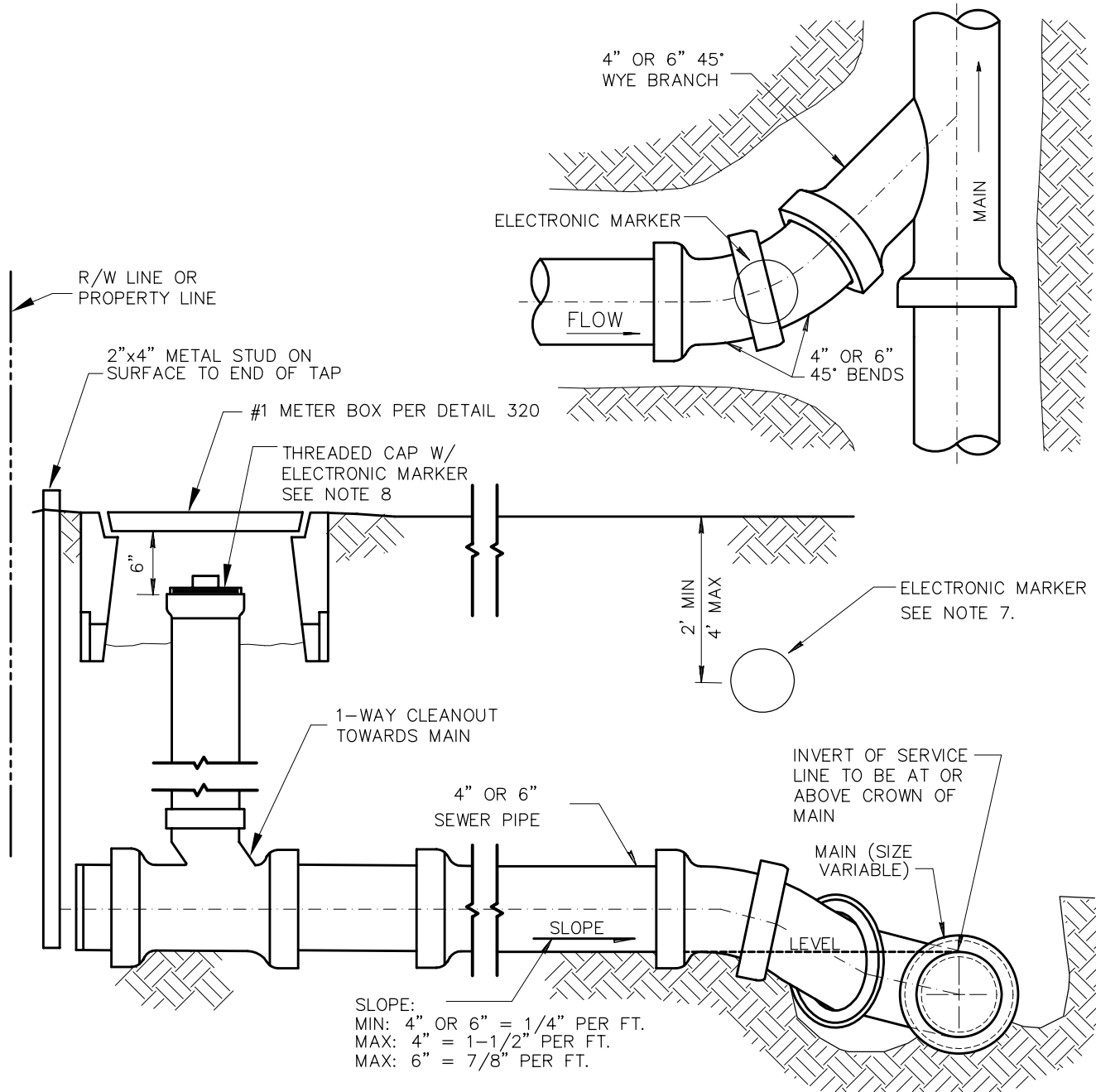
TYPE 'B' - SEWER BUILDING CONNECTION
TWO-WAY CLEANOUT AND METER BOX AT R/W
(WHEN SPECIFIED BY LOCAL AGENCY)

REVISED

01-01-2007

DETAIL NO.

440-2



NOTES:

1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF TAP SHALL BE DESIGNATED ON PLANS.
3. CONSTRUCT TAP AT MIN. SLOPE IF COVER WILL BE LESS THAN 5' AT PROPERTY LINE.
4. IF DEPTH REQUIRES, MINIMUM SLOPE CAN BE REDUCED TO 1/8" PER FOOT PROVIDED STUB IS STAKED TO GRADE.
5. ALL FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321. THE CONTRACTOR MAY VARY FROM THE DRAWING TO USE THE APPROPRIATE WYES, TEE-WYES AND BENDS TO ENSURE NO MISALIGNMENT OF THE PIPE AND FITTINGS. BLOCK OR BRACE FITTING JOINTS TO ENSURE ZERO DEGREES ANGULAR JOINT DEFLECTION.
6. END OF TAP TO BE SEALED AND MARKED.
7. ELECTRONIC MARKER SHALL BE A 3M MODEL 1424-XR/iD [4" DIAMETER SELF LEVELING MARKER BALL GREEN IN COLOR] OR APPROVED EQUAL OR AS REQUIRED BY THE LOCAL AGENCY.
8. INSTALL RAISED 4" THREADED PLUG IN CLEANOUT INCORPORATING 3M MODEL 1414 ELECTRONIC DISC MARKER. GREEN IN COLOR. LOCATOR PLUG TO BE GPK PRODUCTS MODEL #228-0004 DM OR APPROVED EQUAL.
9. STAMP OR WELD THE LETTER "S" ON LID OF METER BOX.

DETAIL NO.

440-3



STANDARD DETAIL
ENGLISH

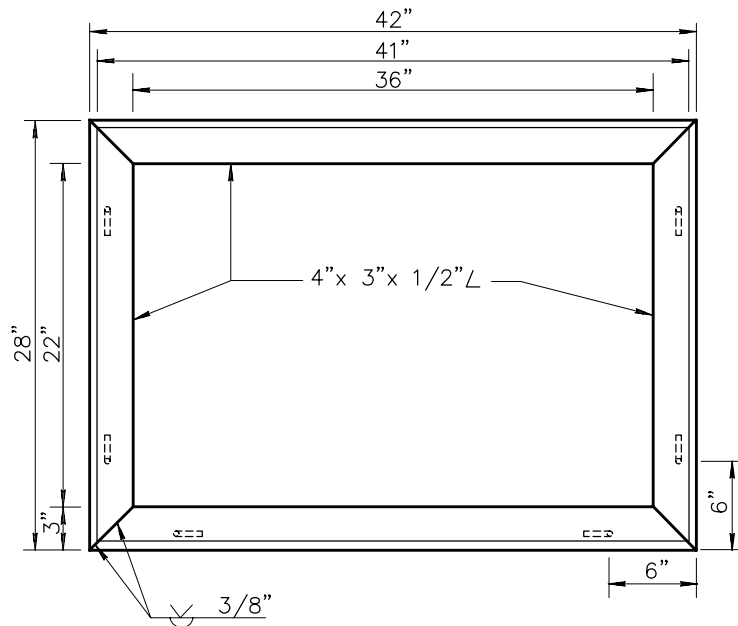
TYPE 'C' – SEWER BUILDING CONNECTION
ONE-WAY CLEANOUT AND METER BOX
(WHEN SPECIFIED BY LOCAL AGENCY)

REVISED

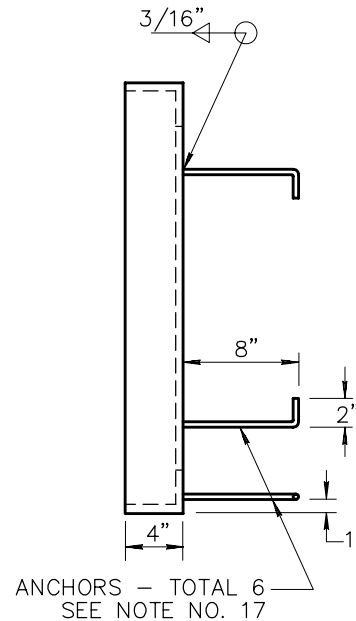
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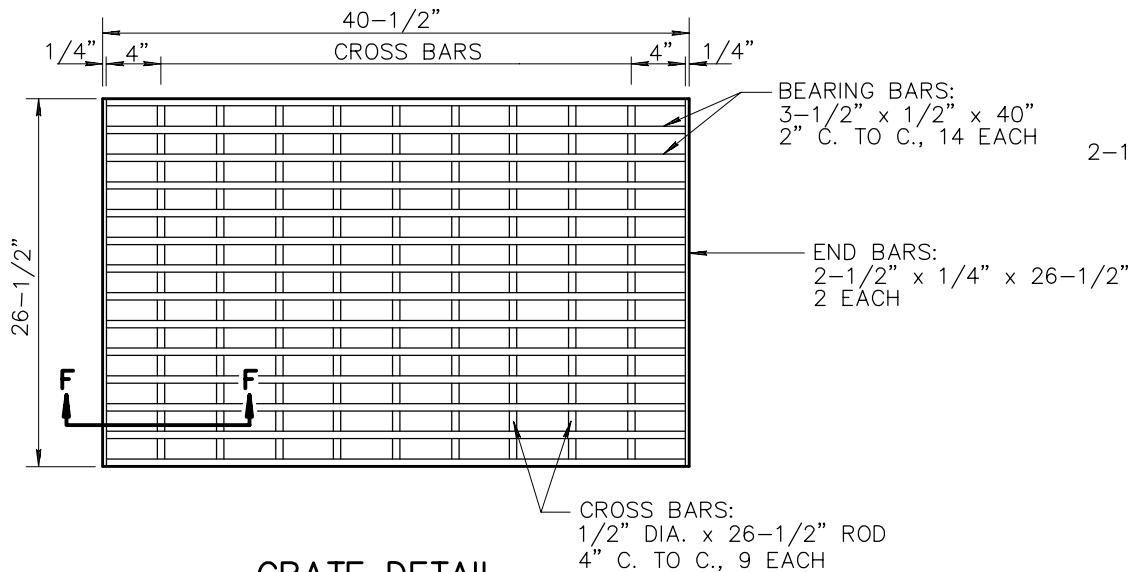
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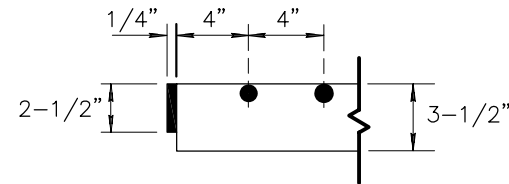
FRAME DETAIL



- FRAME AND GRATE NOTES**
14. FRAME AND GRATING SHALL BE TESTED FOR ACCURACY OF FIT AND SHALL BE MARKED IN SETS BEFORE DELIVERY.
 15. ALL WELDING SHALL BE IN ACCORDANCE WITH STANDARD WELDING SPECIFICATIONS.
 16. CROSS BARS AND END BARS MAY BE FILLET WELDED, RESISTANCE WELDED OR ELECTRO FORGED TO BEARING BARS.
 17. ANCHORS SHALL BE 3/8" DIA. STEEL ROD, NO. 3 REBAR, 3/8" DIA. x 8" BOLTS OR 8" NELSON STUDS.
 18. ALL PARTS SHALL BE OF STRUCTURAL GRADE STEEL.
 19. ALL EXPOSED STEEL SHALL BE GALVANIZED OR PAINTED WITH ONE COAT #1 PAINT AND TWO FIELD COATS OF #10 PAINT.



GRATE DETAIL



SECTION F-F

DETAIL NO.

533-3



STANDARD DETAIL
ENGLISH

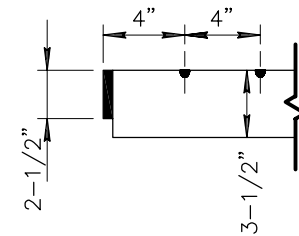
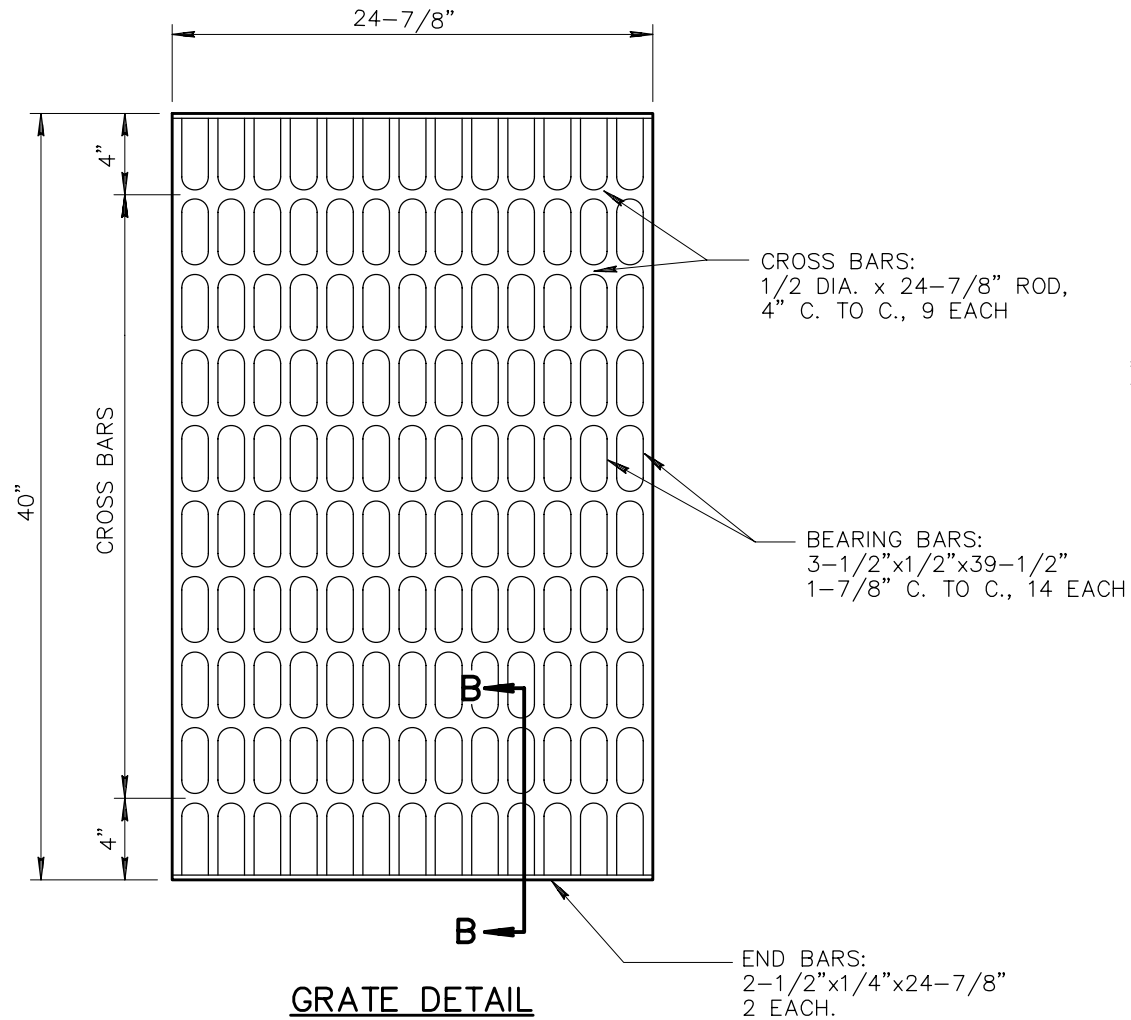
**FRAME AND GRATE
FOR TYPE 'D' CATCH BASIN**

REVISED

01-01-2007

DETAIL NO.

533-3



SECTION B-B

GRATE DETAIL

GRATE OPENING: 4.344 SQ. FT.

DETAIL NO.

533-4



STANDARD DETAIL
ENGLISH

**7'-0" CURB OPENING CATCH BASIN
TYPE 'D' - GRATE DETAILS**

REVISED

01-01-2007

DETAIL NO.

533-4